QUALITY ASSURANCE DOCUMENT

FOR A

SMALL WASTEWATER LAB

3rd Edition April, 1999

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EXECUTIVE SUMMARY

The Quality Assurance Document For A Small Wastewater Lab provides a condensed version of Code requirements as well as information regarding the essential elements of a quality control program in a wastewater laboratory. We have compiled a set of tools which the wastewater labs can use to ensure the generation of quality data. In addition, this document serves as an excellent resource to complement the training of new technicians at wastewater laboratories. This manual is not designed to be a complete guidance document for commercial laboratories, as it is written based on the analytical testing requirements associated with wastewater only.

ACKNOWLEDGEMENTS

In addition to the DNR staff from the various offices who provided assistance in writing, reviewing and providing suggestions for the document, there are also a number of external individuals, including the staff of the plant that served as the model for this document, who provided insight into wastewater laboratory operations.

The following individuals are acknowledged for having made significant contributions over the history of this document:

1st edition (1989)
Carol Johnson ..... (formerly) Madison Central Office
Tom Mugan ..... Madison Central Office
Linda Vogen ..... Northeast Region Office

2nd edition (1992)
Rick Mealy ..... Madison Central Office

3rd edition (1998)
Rick Mealy ..... Madison Central Office

There are also a number of individuals, including personnel from the treatment facility serving as the model, who provided information, advice, or assisted in the review process. Many of the Staff members at the Lab Certification Central Office and Regional Certification Officers also provided input for this latest version of the manual. John Condron, in particular, provided initial editing of the document for consistency with recent changes in Administrative Code and authoritative sources. The end result is the production of a document which will be invaluable to both the DNR staff and wastewater laboratory personnel as both a reference and guidance document.

PREFACE

Here is a copy of the quality assurance plan for the laboratory at the Tree City Wastewater Treatment Facility. Quality assurance plans similar to this one are very valuable to maintaining analytical performance and assuring compliance with the requirements of NR 149, the Laboratory Certification and Registration Code.

This third revision to the Quality Assurance Document For A Small Wastewater Lab comes as a result of the joint efforts of a number of individuals over the last six years. While the main focus of this revision was to include recent changes to chapter NR 149 of Wisconsin's Administrative Code, we are also responding to a perceived need for additional information. Over the last several years, discussions with operators during on-site evaluations has helped to identify the type of information that would be most beneficial to these laboratories. Consequently, a concerted effort was made here to further expand on specific topics related to quality assurance and quality control.

This material is being distributed as guidance for use by laboratory personnel regarding elements of a quality assurance program. The Tree City facility is a small to medium sized (about 2.0 mgd of combined domestic and industrial wastewater). Only the essential elements of a quality assurance document are included in this "model" plan. Therefore this represents what might be considered a minimum program. Some laboratories may choose to expand this by providing more detail.

Please note that, where details are provided, they are specific to Tree City. The elements comprising the program are generic, however. Please use as much or as little of this material as you wish.

In addition to an application and payment of fees, NR 149 requires:

1. Following approved methods of analysis.

2. Using approved methods for sample collection, handling, and preservation and performing all testing within regulatory holding times.

3. Analyzing and passing at least one reference sample per year for tests that require them.

4. Preparation and adherence to a written Quality Assurance Plan.

5. Performance of quality control samples including analysis of blanks, blind standards, known standards, spikes and replicates.

6. Documentation which substantiates that requirements are being met. Records must be retained for at least three years.

This "model" quality assurance plan incorporates all of these essential ingredients. If the resulting program is followed, your laboratory will be well on its way to generating quality data and compliance with the Lab Certification/Registration rules. Perhaps more importantly, quality data will allow you to make better operations decisions, avoiding unnecessary delays and expense!

Editor's Note: *This document constitutes the third edition of "A Quality Assurance Manual for a Small Wastewater Lab". This third edition includes the reorganization of the Department of Natural Resources and other clarifications, updates, and additions. Specific products and brand names listed in this manual are given as examples only and do not represent an endorsement by the Wisconsin Department of Natural Resources. The fictitious name of this community has been changed to Tree City in this edition.*

Table of Contents